ERRATA CORRIGE

Generalization of Conjugate Direction Methods in the Optimization of Functions

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Abstract. An erratic formulation of the construction of an A-conjugate pair given in Ref. 1 is corrected.

Key Words. Unconstrained optimization, function minimization, mathematical programming, nonlinear optimization.

While performing numerical experiments with the minimization method given in Section 5 of Ref. 1, an error in the formulation of the conjugation algorithm given in the same section was discovered.

$$u^0 = s_0 p^0,$$

$$r_{11} = v^{0T} A p^1 / v^{0T} A u^0,$$

$$u^1 = s_1 (p^1 - r_{11} u^0),$$

$$r_{12} = v^{0T} A p^2 / v^{0T} A u^0,$$

$$r_{22} = (v^{1T} A p^2 - v^{1T} A u^0 r_{12}) / v^{1T} A u^1,$$

$$u^2 = s_2 (p^2 - r_{12} u^0 - r_{22} u^1),$$

$$r_{13} = v^{0T} A p^3 / v^{0T} A u^0,$$

$$r_{23} = (v^{1T} A p^3 - v^{1T} A u^0 r_{13}) / v^{1T} A u^1,$$

$$r_{33} = (v^{2T} A p^3 - v^{2T} A u^0 r_{13} - v^{2T} A u^1 r_{23}) / v^{2T} A u^2,$$

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$$u^3 = s_3(p^3 - r_{13}u^0 - r_{23}u^1 - r_{33}u^2),$$

$$\vdots$$

$$r_{1k} = v^{0T}Ap^k / v^{0T}Au^0,$$

$$\vdots$$

$$r_{kk} = (v^{k-1,T}Ap^k - v^{k-1,T}Au^0 r_{1k} - \cdots - v^{k-1,T}Au^{k-2}r_{k-1,k})/v^{k-1,T}Au^{k-1},$$

$$u^k = s_k(p^k - r_{1k}u^0 - r_{2k}u^1 - \cdots - r_{kk}u^{k-1}),$$

$$\vdots$$

The error had no effect on the results obtained in Section 6 of Ref. 1, due to the choice of $V = U$ in that section.

References

1. VAN WYK, D. J., *Generalization of Conjugate Direction Methods in the Optimization of Functions,* Journal of Optimization Theory and Applications, Vol. 21, No. 4, 1977.